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Final Exam
Final Exam Instructions

1. Time allowed: **1 hour**

2. Attempts per question:

   - One attempt - For True/False questions

   - Two attempts - For any question other than True/False

3. Clicking the "**Final Check**" button when it appears, means your submission is **FINAL**. You will **NOT** be able to resubmit your answer for that question ever again

IMPORTANT: Do not let the time run out and expect the system to grade you automatically. You must explicitly submit your answers, otherwise they would be marked as incomplete.

Question 1

1/1 point (graded)

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○ To represent the expression in a human-readable form

○ To show the expression in a GUI

○ Because it is the only way to solve mathematical expressions in a digital computer

○ None of the above

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

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○ A function that models a phenomenon or process

○ A function to normalize the output

○ All of the above

○ None of the above

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 3

1/1 point (graded)
Why is TensorFlow considered fast and suitable for Deep Learning?

○ It is suitable to operate over large multi-dimensional tensors

○ It runs on CPU

○ Its core is based on C++

○ It runs on GPU

◉ All of the above ✔

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✔ Correct (1/1 point)

Question 4

0/1 point (graded)

Can TensorFlow replace Numpy?

○ None of the above

○ No, whatsoever

◉ With only Numpy we can't solve Deep Learning problems, therefore, TensorFlow is required ✖

○ Yes, completely

○ Partially for some operations on tensors, such as minimization

Submit   You have used 2 of 2 attempts

✖ Incorrect (0/1 point)

Question 5

1/1 point (graded)

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○ They connect only to neurons in the local region (kernel size) of input images

○ They build feature maps hierarchically in every layer

○ They are inspired by human visual systems

○ None of the above

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 6

1/1 point (graded)
What is the meaning of "Strides" in Maxpooling?

○ The number of pixels the kernel should add

● The number of pixels the kernel should move ✔

○ The size of the kernel

○ The number of pixels the kernel should remove

○ None of the above

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✔ Correct (1/1 point)

Question 7

1/1 point (graded)

What is TRUE about "Padding" in Convolution?

- ⦿ size of the input image is reduced for the "VALID" padding ✔

- ○ Size of the input image is reduced for the "SAME" padding

- ○ Size of the input image is increased for the "SAME" padding

- ○ Size of the input image is increased for the "VALID" padding

- ○ All of the above

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 8

1/1 point (graded)

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○ (0,5)

⦿ (0, Max) ✔

○ (-inf,inf)

○ (0,1)

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 9

0/1 point (graded)

Which are types of Recurrent Neural Networks? (Select all that apply)

☐ LSTM

☐ Hopfield Network

☑ Recursive Neural Network

☐ Deep Belief Network

☐ Elman Networks and Jordan Networks

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✖ Incorrect (0/1 point)

Question 10

1/1 point (graded)
Which is TRUE about RNNs?

○ RNNs can predict the future

⦿ RNNs are VERY suitable for sequential data ✔

○ RNNs are NOT suitable for sequential data

○ RNNs are ONLY suitable for sequential data

○ All of the above

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 11

1/1 point (graded)

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○ Gradients can quickly drop and stabilize at near zero

○ Propagation of errors due to the recurrent characteristic

○ Gradients can grow exponentially

◉ All of the above ✔

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 12

1/1 point (graded)
What type of RNN would you use in an NLP project to predict the next word in a phrase? (only one is correct)

○ Bi-directional RNN

○ Neural history compressor

◉ Long Short-Term Memory ✔

○ Echo state network

○ None of the above

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✔ Correct (1/1 point)

Question 13

1/1 point (graded)
Which one does NOT happen in the "forward pass" in RBM?

- ⦿ Making a deterministic decision about returning values into network. ✔

- ○ Multiplying inputs by weights, and adding an overall bias, in each hidden unit.

- ○ Applying an activation function on the results in hidden units.

- ○ Feeding the nework with the input images converted to binary values.

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 14

1/1 point (graded)

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○ Object Detection in images

○ Coloring black and white images

◉ Predicting next word in a sentence ✔

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 15

1/1 point (graded)
Select all possible uses of Autoencoders and RBMs (select all that apply):

☑ Clustering

☑ Pattern Recognition

☑ Dimensionality Reduction

☐ Predict data in time series

✔

Submit   You have used 2 of 2 attempts

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Which technique is proper for solving Collaborative Filtering problem?

○ DBN

◉ RBM ✔

○ CNN

○ RNN

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 17

1/1 point (graded)

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- ◉ The size of input and Last Layers must be of the Same Dimensions ✔

- ○ The Last Layer must be Double the size of Input Layer Dimension

- ○ The Last Layer must be half the size of Input Layer Dimension

- ○ None of the Above

| Submit | You have used 2 of 2 attempts |

✔ Correct (1/1 point)

Question 18

1/1 point (graded)

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Features to be extracted

○ The centre-most layer should have the smallest size compared to all other layers

○ The Network should have an odd number of layers

○ All the layers must be symmetrical with respect to the centre-most layer

◉ All of the Above ✔

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 19

1/1 point (graded)

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○ It can be used to train CNNs

○ It can be used to train RBMs

○ It can be used to train Autoencoders

◉ All of the Above ✔

Submit   You have used 2 of 2 attempts

✔ Correct (1/1 point)

Question 20

1/1 point (graded)
How can Autoencoders be improved to handle higly non-linear data?

○ By using Genetic Algorithms

◉ By adding more Hidden Layers to the Network ✔

○ By using Higher initial Weight Values

○ By using Lower initial Weight Values

○ All of the Above

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✔ Correct (1/1 point)